14.

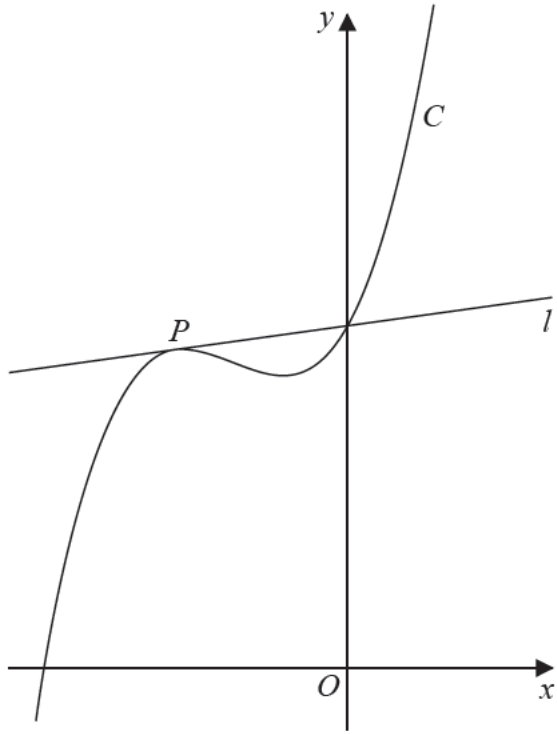

Figure 3

Figure 3 shows a sketch of part of the curve C with equation $y = \mathrm{f}(x)$, where

$$\mathrm{f}(x) = (x + 4)(2x^2 + x + 7)$$

(a) Use the given information to state the values of x for which

$$\mathrm{f}(x) > 0$$

(1)

(b) Expand $(x + 4)(2x^2 + x + 7)$ writing your answer as a polynomial in simplest form.

(2)

The straight line l, also shown in Figure 3, has gradient k.

Given that

- l intersects C on the y-axis
- l is a tangent to C at a point P, as shown in Figure 3

(c) find the value of k.

(5)